

## ABSTRACT

*gms* The invention includes a computer-based diagnostic system to detect and analyze ground reaction forces produced by an animal passing through the diagnostic system, wherein the system is particularly suited for detecting lameness in animals through analysis of the forces generated by the animal as it moves through the apparatus and system of the invention. The invention includes, in one aspect, a first plate and a second plate disposed adjacent the first plate, a first plurality of load cells, and a second plurality of load cells. Each of the first plurality of load cells is configured to detect a force applied to the first plate along at least one axis and output a signal representative of the detected force and each of the second plurality of load cells is configured to detect a force applied to the second plate along at least one axis and output a signal representative of the detected force. A processor is provided and adapted to execute at least one force analysis instruction set, whereby the force analysis instruction set receives the signals output from the first and second plurality of load cells and calculates, in combination with the processor, a magnitude and location of a force applied to either of the first plate and the second plate.

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